

Merun #14/ K.T. 1600 12/31/01 12/31/01 12/31/01 12/31/01 12/31/01 12/31/01 12/31/01 12/31/01

RAW SEQUENCE LISTING

* J.Zara ••

PATENT APPLICATION: US/09/486,757

DATE: 12/27/2001 TIME: 11:30:01

Input Set : A:\J&J1673seqlist.txt

Output Set: N:\CRF3\12272001\I486757.raw

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3 <110> APPLICANT: Kutchan, Toni
              Zenk, Meinhart
              Atkins, David
      7 <120> TITLE OF INVENTION: Cytochrome P450 Reductases from Poppy Plants
      9 <130> FILE REFERENCE: J&J 1673
     11 <140> CURRENT APPLICATION NUMBER: US 09/486757
C--> 12 <141> CURRENT FILING DATE: 2000-02-28
     14 <150> PRIOR APPLICATION NUMBER: AU PO8872
     15 <151> PRIOR FILING DATE: 1997-08-29
                                                               ENTERED
     17 <160> NUMBER OF SEQ ID NOS: 32
     19 <170> SOFTWARE: PatentIn version 3.0
     21 <210> SEQ ID NO: 1
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     22 <211> LENGTH: 10
     23 <212> TYPE: PRT
     24 <213> ORGANISM: Papaver somniferum
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     40 Glu Lys
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    44 <211> LENGTH: 18
    45 <212> TYPE: PRT
    46 <213> ORGANISM: Papaver somniferum
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    52 Glu Lys
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W--> 68 <400> SEQUENCE: 5

56 <211> LENGTH: 8 57 <212> TYPE: PRT

64 <210> SEQ ID NO: 5 65 <211> LENGTH: 8 66 <212> TYPE: PRT

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58 <213> ORGANISM: Papaver somniferum

67 <213> ORGANISM: Papaver somniferum

70 Lys Asp Phe Thr Glu Val Ala Lys

61 Lys Trp Phe Thr Glu Val Ala Lys





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Input Set : A:\J&J1673seqlist.txt

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     126 ggatttggtt tettegeatg tatgaaatet tegtettete aateaaaace tattgaaact
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     128 tataaaccaa taattgataa agaagaagag gagattgaag ttgatcctgg taaaattaag
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     130 ctcactatat tttttggtac tcagactggt actgctgaag gatttgctaa ggcattggca
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     132 gaagaaatta aggcaaagta caagaaagca gttgttaaag tagttgacct ggatgactat
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     134 gcagccgagg atgatcaata tgaagagaaa ttaaagaaag agtctttggt gtttttcatg
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     136 gtagccactt atggtgatgg tgagccaact gacaatgctg cgagatttta caaatggttc
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     140 ggtaaccgtc aatacgagca tttcaacaag atcgcggtag atgtggatga gcaactcggt
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     142 aaacaaggtg caaagcgcat tgttcaagtg gggctcggtg acgatgatca atgcattgaa
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     148 gtgattcacg aaactacggt cgcggctctg gatgataaac acataaatac tgctaacggc
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     150 gatgttgcat ttgatattct ccatccttgc agaaccattg ttgctcaaca aagagagctc
     152 cacaaaccca agtctgatag atcctgtata catctggagt tcgacatatc aggctcttcc
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     156 gaggaagcag ggaagctgtt gggtcaaccc ctggatttgc tgttttcaat tcacacggat
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     158 aaagaagacg ggtcacccca gggaagctca ttaccacctc ctttcccagg tccttgcacc
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     160 ttacgatctg ccctagcacg ctatgctgat cttttgaatc ctcctagaaa ggcttctctg
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     162 attgctctgt ccgctcatgc atctgtaccc agtgaagcag agagattgcg ctttttgtca
     164 tcacctctgg gaaagaatga gtattcaaaa tgggtagttg gaagtcagag gagtcttttg
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     166 gagateatgg ccgagtttee ateageaaaa ecceetettg gtgtgttett tgetgeagta
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     168 geoecteget tacegeoteg atactattet ateteateet etectaagtt tgeteectea
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     174 gttcgaacgt caaacttcaa gttaccagct gacccctcaa ctccaattat catggtggga
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     194 gattetteet ceagtggtte caaategaag eteggtataa ttgagageag tgeaattgtg
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     196 actacatqaq aaqcaaacat cqaataccat aqaattagaa agatcaaaat tctcttatca
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     198 qaacaatgtt acaggcaaaa ctgtgtttgc ttaatataaa tttcacacca tgggtgtgga
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     200 caacactgaa acagtattag ctataccaac aaagttatgc aaggaaacac aaactagtta
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     202 gatcttctct ttggattgat tactgtaagt tctaaccaga tgatagattg tacttaaaga
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     220 aaaactatgg aacaaactgc ggttaaagtc tctttgtttg atctattttc ttcgatactt
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     222 aatggaaagt tggatccqtc gaacttttct tcagattcaa gtgctgctat tttgattgaa
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     232 gcaagatatg aaaaggcaat ctttaaagtg attgatctgg atgattacgg agcagatgat
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720





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     328 gtagccactt atggtgatgg tgagccaact gacaatgctg cgagatttta caaatggttc
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     330 actcaggaac atgaaagggg agagtggctt cagcaactaa cttatggtgt ttttggtttg
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334 aaacaaggtg caaagcgcat tgttcaagtg gggctcggtg acgatgatca atgcattgaa

720

780





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     340 gtgattcacg aaactacggt cgcggctctg gatgataaac acataaatac tgctaacggc
                                                                               960
     342 gatgttgcat ttgatattct ccatccttgc agaaccattg ttgctcaaca aagagagctc
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     344 cacaaaccca agtitigatag atcctigtata catctiggagt tigacatatic aggitictics
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     346 cttacatatg agactggaga tcatgttggt gtttatgctg agaactgcga tgaaactgtc
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     348 gaggaagcag ggaagctgtt gggtcaaccc ctggatttgc tgttttcaat tcacacggat
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     350 aaagaagacg ggtcacccca gggaagctca ttaccacctc ctttcccagg tccttgcacc
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     352 ttacgatctg ccctagcacg ctatgctgat cttttgaatc ctcctagaaa ggcttctctg
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     366 gttcgaacgt caaacttcaa gttaccagct gacccctcaa ctccaattat catggtggga
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     374 attgcctttt cacgtgaagg ggaaaagaag gaatatgttc aacataagat gatggagaaa
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     378 aagggaatgg ccagagatgt ccatcgcacg ttgcatacca ttgcccaaga acagggaccc
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     380 atggaatcat ctgctgccga agctgcagta aagaaactcc aagttgaaga acgatatcta
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     382 agagatgtet ggtgategaa tgtagettge caagteeeet tttettgget ggtetgttta
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     386 gattetteet ceagtggtte caaategaag eteggtataa ttgagageag tgeaattgtg
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     390 gaacaatgtt acaggcaaaa ctgtgtttgc ttaatataaa tttcacacca tgggtgtgga
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     392 caacactgaa acagtattag ctataccaac aaagttatgc aaggaaacac aaactagtta
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     394 gatettetet ttggattgat taetgtaagt tetaaceaga tgatagattg taettaaaga
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     403 <212> TYPE: PRT
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     414 Thr Val Ala Ser Met Leu Ile Gly Phe Gly Phe Phe Ala Cys Met Lys
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     417 Ser Ser Ser Ser Gln Ser Lys Pro Ile Glu Thr Tyr Lys Pro Ile Ile
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     420 Asp Lys Glu Glu Glu Ile Glu Val Asp Pro Gly Lys Ile Lys Leu
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     423 Thr Ile Phe Phe Gly Thr Gln Thr Gly Thr Ala Glu Gly Phe Ala Lys
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Use of n and / or Xaa has been detected in the Sequence Listing. Review the Sequence Listing to ensure a corresponding explanation is present in the <220> to <223> fields of each sequence using n or Xaa.



VERIFICATION SUMMARY
PATENT APPLICATION: US/09/486,757

DATE: 12/27/2001 TIME: 11:30:02

Input Set : A:\J&J1673seqlist.txt

Output Set: N:\CRF3\12272001\I486757.raw

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L:35 M:283 W: Missing Blank Line separator, <400> field identifier
L:47 M:283 W: Missing Blank Line separator, <400> field identifier
L:59 M:283 W: Missing Blank Line separator, <400> field identifier
L:68 M:283 W: Missing Blank Line separator, <400> field identifier
L:77 M:283 W: Missing Blank Line separator, <400> field identifier
L:86 M:283 W: Missing Blank Line separator, <400> field identifier
L:95 M:283 W: Missing Blank Line separator, <400> field identifier
L:104 M:283 W: Missing Blank Line separator, <400> field identifier
L:116 M:283 W: Missing Blank Line separator, <400> field identifier
L:213 M:283 W: Missing Blank Line separator, <400> field identifier
L:307 M:283 W: Missing Blank Line separator, <400> field identifier
L:405 M:283 W: Missing Blank Line separator, <400> field.identifier
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L:636 M:283 W: Missing Blank Line separator, <400> field identifier
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L:989 M:283 W: Missing Blank Line separator, <400> field identifier
L:1069 M:283 W: Missing Blank Line separator, <400> field identifier
L:1839 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27
L:1875 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:28
L:1893 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:29
L:1911 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:30
L:1971 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:31
L:2031 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:32
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